

## Norton CrashGuard™ 16-bit Crash Test dialog

Use this dialog box to generate any of the 16-bit exceptions listed. This will test the ability of CrashGuard™ to trap and fix the resulting crash.

### To generate an exception:

- 1 Select the exception you want to generate.
- 2 Click Generate.

### Note:

- As you select each exception, a detailed description of it appears near the bottom of the dialog box.

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{button ,KL(^Exceptions',0,';','')}

Related Topics

## 16-bit Exceptions

Norton CrashGuard™ traps crashes caused by the following 16-bit exceptions:

### General Protection Fault

The program tried to examine data that is off-limits or does not exist.

### Invalid Opcode

The program tried to execute an instruction that is not recognized by the processor.

### Divide By Zero

The program tried to divide a number by 0. This is an arithmetic problem for which there is no solution, so the computer can not calculate the result.

### Stack overflow

The program used too many automatic variables or nested function calls too deeply.

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{button ,KL('Exceptions',0,'')}>

Related Topics

## Norton CrashGuard™ 32-bit Crash Test dialog

Use this dialog box to generate any of the 32-bit exceptions listed. This will test the ability of CrashGuard™ to trap and fix the resulting crash.

### To generate an exception:

- 1 Select the exception you want to generate.
- 2 Click Generate.

### Note:

- As you select each exception, a detailed description of it appears near the bottom of the dialog box.

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{button ,KL(^Exceptions',0,';','')}

Related Topics

## 32-bit Exceptions

Norton CrashGuard™ traps crashes caused by the following 32-bit exceptions:

### Access Violation

The program tried to examine invalid data. This means that there is either no information at that location, or the information is off-limits to the program.

### Array Bounds Exceeded

The program tried looking off the end of an array. In other words, the program looked off the end of a finite-sized table it has in memory.

### Breakpoint

A breakpoint marks a place where the program should stop when being tested by the original programmer.

### Datatype Misalignment

Some programs use datatype-alignment to ensure the program knows what type of data it is using. Such programs will stop with this error if they try using the wrong type of data.

### Float Denormal Operand

The program performed arithmetic using numbers too small to be represented in the normal way. Such numbers are called "denormalized" numbers.

### Float Divide By Zero

The program tried to divide a real number by 0. This is an arithmetic problem for which there is no solution, so the computer can not calculate the result.

### Float Inexact Result

The program tried solving an arithmetic problem for which the result can not be precisely recorded using the computer's binary number system.

### Float Invalid Operation

The program attempted invalid arithmetic, such as calculating the square root of -1 or dividing infinity by infinity.

### Float Overflow

The program tried solving arithmetic which lead to numbers too large to be recorded in the computer's binary number system.

### Float Stack Check

The program used up all of the math processor's internal storage space. This error can also occur if a program tries to get more numbers from the math processor's storage after it has been emptied.

### Float Underflow

The program performed arithmetic which yielded denormalized (too small to represent) results.

### Illegal Instruction

The program sent the CPU an instruction which is undefined. This means the program uses a code number which does not correspond to any known operation.

### In Page Error

(Simulated) This error occurs if Windows temporarily stores away some of a program's data on disk and then can not get it back when it is needed again.

### Integer Divide By Zero

The program tried to divide the integer number 1 by 0. This is an arithmetic problem for which there is no solution, so the computer can not calculate the result.

### Integer Overflow

The program tried to solve arithmetic which lead to numbers too large to be recorded in the computer's binary number system.

### Invalid Disposition

(Simulated) The program tried to solve another error for itself, but did not tell the system how it should then proceed.

### Non-Continuable Exception

(Simulated) The program tried to continue after a serious error without fixing the problem which caused the error.

### Privileged Instruction

The program tried to perform an operation which it does not have the right to do. For stability's sake, many important operations can only be performed by the system.

**Single Step**

Signaled the system that the program completed a single instruction. This will occur if the programmer forgot to remove commands he/she used to test a program.

**Stack Overflow**

The program used up all of the stack-type memory allotted to it. The stack refers to a program's short-term memory.

**Unknown (or private)**

The program generated an exception that is not a standard Windows exception.

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{button ,KL('Exceptions',0,';')}>

Related Topics

## Answers to common questions

### When does CrashGuard™ not catch a crash?

Although CrashGuard™ catches every type of crash, it can not catch all crashes that occur in KERNEL32.DLL, VXD's, and certain device drivers.

### When does CrashGuard™ not fix a crash?

CrashGuard™ tries to fix every crash it intercepts, but it isn't always successful. Situations where a "recovery" may not be possible are:

- the application crashes *after* it has corrupted its data
- the application has entered a state and can not continue until the state is cleared
- the application is 16-bit and has destroyed its stack

### When does Anti-Freeze™ not work?

As when fixing 32-bit crashes, Anti-Freeze™ can not help an application if:

- it froze *after* corrupting its own data
- it is waiting for a state that was never cleared
- it is a 16-bit application that stopped processing messages

### How much memory does CrashGuard™ take?

CrashGuard™ is designed to be very transparent and lean:

- The 32-bit exception handler takes no memory when "idle," and about 84K when handling a fault.
- The 16-bit exception handler uses 36K.
- The application associated with the icon in the clock area uses 36K.
- Grand total: **72K**

### How safe is CrashGuard™?

CrashGuard™ is extremely safe.

- As a "JIT (just-in-time) debugger," the 32-bit exception handler is only called when an exception occurs, so at worst, it can only crash an already-crashed application.
- The 16-bit exception handler is also very safe in that it performs no background activity, does not hook, and does not subclass
  - it is only called by Toolhelp (part of Windows) when a crash occurs in a 16-bit application.
- The application associated with the icon in the clock area does nothing but bring up a menu when it is selected.

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{button ,AL('ConnectSymantec',0,'')} Related Topics

## Anti-Freeze™

Anti-Freeze™ unfreezes a frozen application — a program that was running and is still on your screen but is not responding to input from you or Windows.

When you notice that an application is frozen, launch Anti-Freeze™ and unfreeze the application.

### To launch Anti-Freeze™:

- ▶ Right-click the CrashGuard™ icon  in the clock area and select Anti-Freeze™.  
or (if the CrashGuard™ icon is not visible),
- ▶ Click Start, then Programs, Norton CrashGuard™, and Norton CrashGuard™. Click Anti-Freeze™.

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{button ,EF('crashgrd.hlp',',5,')}

[Help Contents](#)


**Clock Area**

The recessed area at the right end of the Windows taskbar that normally displays a digital clock.



## Closing CrashGuard™

### To close CrashGuard™:

- 1 Right-click the CrashGuard™ icon  in the clock area.
- 2 Select Close. A dialog box will appear and ask you to confirm that you want to close CrashGuard™.

### Notes:

- Closing CrashGuard™ this way removes it from memory and prevents it from monitoring your system for crashes. (To restart CrashGuard™, see {button ,Jl(' crashgrd.HLP>howto','Launching\_CrashGuard')} "Launching CrashGuard™.")

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{button ,AL('CrashGuardStates',0,'')} Related Topics

## Closing a frozen application

Sometimes an application can not be satisfactorily unfrozen. (For example, an application may freeze because the data it is working with has been damaged. Anti-Freeze™ may unfreeze the application but then the application immediately freezes again because of the damaged data.) In such cases, you may need to close the frozen application.

### To close a frozen application:

- 1 Close Anti-Freeze™ (if it is still open).
- 2 Press Ctrl+Alt+Del to display Windows' Close Program dialog box.
- 3 Select the frozen application in the list of running applications.
- 4 Click End Task.




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{button ,AL(^AntiFreeze',0,';')}>

Related Topics

## Configuring CrashGuard™

### To configure CrashGuard™:

- 1 Right-click the CrashGuard™ icon  in the [clock area](#).
  - 2 Make sure 32-Bit Crash Protection is checked  to let CrashGuard™ trap and fix crashes caused by 32-bit applications.
  - 3 Make sure 16-Bit Crash Protection is checked  to let CrashGuard™ trap and fix crashes caused by 16-bit applications.
- These menu settings are toggles; select either menu item again to disable (remove the check mark from) the corresponding setting.

### Note:

- You can also configure CrashGuard™ by clicking Settings on the main CrashGuard™ shield.

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{button ,KL('Exceptions',0,'')}>

Related Topics

## Norton CrashGuard™ Settings dialog

Use this dialog box to enable, disable, or test CrashGuard's 16-bit and 32-bit [exception](#) handler.

### Crash Protection

<a href="#">Enable 32-bit Crash Protection</a>	<a href="#">Test</a>
<a href="#">Enable 16-bit Crash Protection</a>	<a href="#">Test</a>

### Statistics

The text area displays the number of intercepted crashes and unfrozen applications.

### [Details](#)

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{button ,KL('Exceptions',0,'')}>

[Related Topics](#)

## Norton CrashGuard Statistics dialog

This dialog box displays:

- how many crashes you have had
- how many freezes you have had
- which applications and modules caused the errors

### Note:

- The applications named TEST16.EXE and TEST32.EXE are CrashGuard's exception-generating programs that are run when you click Test in one of the Crash Test dialog boxes. If either application shows up in this list, those crashes were probably *not* encountered during "normal" computing.

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{button ,KL(^exceptions!,0,";")}

[Related Topics](#)

## Dealing with crashes

When CrashGuard™ traps a crash, the Norton CrashGuard dialog box appears and lists:

- the program that crashed
- the type of crash

### To view details about the crash:

- Click Details to expand the dialog box and display some detailed system information about the crash. (To save this detailed information to a text file, click Save and specify a name and location for the file.)

### To fix a crashed application:

- If the application that crashed was working with data that you need to save, click Fix to let CrashGuard™ try to fix the problem. You should then return to the application, save the data it was working with, and exit the application.

### To close a crashed application:

- If the application that crashed was *not* working with data that you need to save, click Close to close the application. Any data that the application was working with will be lost.

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{button ,KL(^Exceptions',0,';')} }

Related Topics

**Exception**

A serious error which makes it impossible for a program to continue normally.

**Frozen application**

A software program that was running and is still on your screen, but does not respond to input from you or Windows.



## Getting Technical Support and Information

To obtain the latest updates and patches for **NORTON CrashGuard™**:

- Click LiveUpdate on the Norton CrashGuard™ shield. (See {button ,Jl('crashgrd.HLP>howto','Updating\_CrashGuard')} "Updating CrashGuard™.")

Visit the **Symantec World Wide Web** site at:

<http://www.symantec.com>

to obtain:

- Technical Support
  - Answers to Frequently Asked Questions (FAQs)
  - Tips and Tricks
- for **NORTON CrashGuard™** and other Symantec products.
- [Click here](#)



to connect to the Symantec Web site now!

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{button ,AL('ConnectSymantec',0,'')} Related Topics

## **NORTON CrashGuard™**

CrashGuard™ runs in the background and monitors your system for crashes. It recovers from the crash and lets you save any unsaved data.

{button ,JI('CrashGrd.HLP>howto','Dealing\_with\_crashes')}} [\\_More](#)

### **Anti-Freeze™**

Anti-Freeze™ unfreezes a frozen application—a program that is still on your screen but is not responding to input from you or Windows. When you notice that an application is frozen, you can pop up Anti-Freeze™ and unfreeze the application.

{button ,JI('CrashGrd.HLP>howto','Using\_Anti\_Freeze')}} [\\_More](#)

### **Settings**

Lets you select the types of crashes CrashGuard™ will intercept. You can choose to protect your PC from crashes caused by either 16-bit applications, 32-bit applications, or both. This option also lets you trigger any type of crash to test the ability of CrashGuard™ (or any other crash-protection program) to recover from the resulting crash.


{button ,JI('CrashGrd.HLP>howto','Configuring\_CrashGuard')}} [\\_More](#)

### **LiveUpdate**

LiveUpdate™ connects you to the Symantec Internet site, downloads the latest CrashGuard™ updates and patches, and installs them on your PC. You must have a modem and/or an Internet connection (direct or dial-up) to use LiveUpdate.

{button ,JI('CrashGrd.HLP>howto','Updating\_CrashGuard')}} [\\_More](#)

## Launching CrashGuard™

Installing CrashGuard™ sets it up to run every time you run Windows, providing you with constant protection from system crashes. CrashGuard™ is running if you can see the CrashGuard™ icon  in the [clock area](#). If it is not running, you can launch it anytime.

### To launch CrashGuard™:

- Click Start, then Programs, Norton CrashGuard, and Norton CrashGuard™.

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{button ,AL(^CrashGuardStates',0,'')} Related Topics

## LiveUpdate

Connects you to the Symantec Internet site, downloads the latest CrashGuard™ updates and patches, and installs them on your PC.

### Note:

- You must have a modem and/or an Internet connection (direct or dial-up) to use LiveUpdate.

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{button ,EF(^crashgrd.hlp',',5,')} Help Contents

## **NORTON CrashGuard™**

### ***Like what you see?***

- If you have been happy with the protection that **NORTON CrashGuard™** provides, check out these other great system-protection products from **Symantec Corporation**:

### **Norton Utilities™**

The expert's choice for solving all computer problems.

### **PC Handyman™**

A friend who solves your computer problems.

### **Healthy PC™**

The one-button checkup for your PC.

### **Norton AntiVirus™**

Automatic virus protection that eliminates the threat of viruses from Internet downloads, floppy disks, email, shared files, networks, and hard disks.

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#### **For more information:**

- Visit the Symantec Web site at <http://www.symantec.com>



Connect to the Symantec Web Site now!

**OR**

- Visit your local software retailer.

## Recovering from crashes and freezes

When you use CrashGuard™ and Anti-Freeze™ to recover from crashes and freezes, **you should not assume that everything is back to normal**. The crash or freeze could be a symptom of more serious problems with the application. In general, you should:

- 1 save your work as best you can
- 2 exit the offending application
- 3 restart the application

### Saving your work

- Because your document or data file may have been damaged by the crash or freeze, you should first try to save your work into a new file using the Save As command (on the File menu of most applications). This way, the original file, which may still be sound, will remain intact.
- If Save As will not work, try the Save command. But be aware that, even if the save seems to succeed, the next time you try to open the document, it may not open because of the possible damage, or it may need extensive repair.
- If the Save or Save As commands do not work, try selecting the entire document (many applications have a Select All command on the Edit menu) and copying it to the clipboard with the Copy command (on the Edit menu of most applications). If you close the program and start it again (without shutting down Windows) you should be able to paste your work from the clipboard into a new blank work space.
- Some programs include an Export command (often on the File or Tools menu), which may let you save your document in a different format. If an application has an Export command, it will likely have a corresponding Import command that you can use to reclaim your work after you exit the application.
- If none of these techniques work, you can try printing your document or copying it down by hand so that you at least have a solid record of your work.

### Partially disabled applications

- Some freezes may be only partial; for example, the application may stop responding to the keyboard, but will still respond to the mouse. Try clicking the application's menu, since that is the portion most likely to work and probably contains the commands you need most, such as Save, Copy, and Export.
- After a freeze or crash, some parts of a program may stop responding while other parts still work. If the program was showing a dialog box at the time of the malfunction, try clicking its Cancel button or pressing Esc to make it go away. Do not click other controls unless you really need them, since they may be part of the malfunction.
- Sometimes the shape of the mouse cursor can become frozen and its functionality will be other than what its shape indicates. If the mouse cursor is an hourglass (or some other special-purpose shape), try clicking the application anyway.
- As you try to recover, some commands or controls may cause the program to crash or freeze. But CrashGuard™ and Anti-Freeze™ should catch those problems too, so just keep trying until you manage to save your work by one of the methods above.

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{button ,AL(^AntiFreeze',0,';''')}

Related Topics

## Settings

Lets you select the types of crashes CrashGuard™ will intercept. You can choose to protect your PC from crashes caused by either 16-bit exceptions, 32-bit exceptions, or both.

This option also lets you generate any type of exception to test the ability of CrashGuard™ (or any other crash-protection program) to recover from the resulting crash.

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{button ,EF(`crashgrd.hlp`,`5`,``)}

[Help Contents](#)

**Simulated exception**


The CrashGuard™ Crash Test program will simulate this exception and not actually generate it. Generating the exception either is not possible or would be too dangerous.



## Testing CrashGuard™

You can use CrashGuard™ to generate 16-bit or 32-bit exceptions. This lets you test the ability of CrashGuard™ (or any other crash-protection software) to trap that type of crash and recover.

### To test CrashGuard™:

- 1 Right-click the CrashGuard™ icon  in the clock area, then select Open. The CrashGuard™ shield will appear.
- 2 Click Settings. The Norton CrashGuard Settings dialog box will appear.
- 3 To generate either a 16-bit exception or a 32-bit exception, click the corresponding Test button. The Norton CrashGuard™ Crash Test dialog box appears.
- 4 Select the type of exception you want to generate.
- 5 Click Generate. (To recover, see {button ,JI('crashgrd.HLP>howto', 'Dealing\_with\_crashes')} "Dealing with crashes.")

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{button ,KL('Exceptions',0,'')}>

Related Topics

## Uninstalling CrashGuard™

### To uninstall CrashGuard™:

- 1 Click Start, then Settings, and Control Panel.
- 2 Double-click Add/Remove Programs.
- 3 In the list of installed software, double-click Norton CrashGuard™. Follow the instructions in the Norton CrashGuard™ Uninstall wizard.

### Note:

- This removes all Norton CrashGuard™ files from your hard drive. If you want to use CrashGuard™ again, you will need to reinstall the software from the original disk(s).

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{button ,AL(^CrashGuardStates',0,'')} Related Topics

## Updating CrashGuard™

If you have a modem and/or an Internet connection (direct or dial-up), you can easily get the latest CrashGuard™ updates and patches using LiveUpdate.

### To update CrashGuard™:

- 1 Click Start, then Programs, Norton CrashGuard™, and CrashGuard™.
- 2 Click LiveUpdate.
- 3 Follow the instruction on your screen.

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{button ,AL(^ConnectSymantec',0','')} Related Topics

## Using Anti-Freeze™

### When an application appears to be frozen:

- 1 Right-click the CrashGuard™ icon in the clock area and select Anti-Freeze™. (See notes.)  
The Anti-Freeze™ window will appear.
- 2 In the list of running applications, select the frozen application. (It will probably include "[Not responding]" in the label. See notes.)
- 3 Click Unfreeze to unfreeze the application so that you can save any unsaved data.
  - If this procedure does not unfreeze the application, see {button ,Jl(`crashgrd.HLP>howto`,`Closing\_a\_frozen\_application`)} "Closing a frozen application."

### Note:

- If the CrashGuard™ icon is not visible in the clock area, you can launch Anti-Freeze™ by clicking Start, then Programs, Norton CrashGuard™, and Norton CrashGuard™. Then click Anti-Freeze™.
- If none of the applications in the list include "[Not responding]," your application may not be frozen. You might want to close Anti-Freeze™ and wait a little longer to see if your application "comes back."

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{button ,AL(`AntiFreeze`,0`,`)`}

Related Topics

## Viewing CrashGuard™ statistics

As CrashGuard™ traps crashes, it keeps track of:

- how many crashes you have had
- how many freezes you have had
- which applications and modules caused them

### To view these CrashGuard™ statistics:

- 1 Right-click the CrashGuard™ icon \* in the clock area.
- 2 Select CrashGuard™ Statistics from the pop-up menu.

### Note:

- The applications named TEST16.EXE and TEST32.EXE are CrashGuard's exception-generating programs that are run when you click Test in one of the Crash Test dialog boxes. If either application shows up in this list, those crashes were probably *not* encountered during normal computing.

## What is Anti-Freeze™?

Anti-Freeze™ is a program that can unfreeze a frozen application—a program that was running and is still on your screen but is not responding to input from you or Windows.

When you notice that an application is frozen, you can pop up Anti-Freeze™ and unfreeze the application.

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{button ,AL(^AntiFreeze',0,';')}>

Related Topics

## **What is LiveUpdate?**

LiveUpdate connects you to the Symantec Internet site, downloads the latest CrashGuard™ updates and patches, and installs them on your PC.

You must have a modem and/or an Internet connection (direct or dial-up) to use LiveUpdate.

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{button ,AL('ConnectSymantec',0,'')} Related Topics

## What is a frozen application?

A frozen application is a software program that was running and is still on your screen, but does not respond to input from you or Windows. Use Anti-Freeze™ to unfreeze a frozen application.

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{button ,KL(^frozen applications',1,'')} Related Topics



## What is an exception?

The term "exception" refers to a serious error which makes it impossible for a program to continue normally.

### "Normal" errors

Many errors, such as trying to open a nonexistent file or save to a full floppy disk, are **not** exceptions because the program can simply tell you that a problem occurred and then continue. Even if a program asks the operating system to do something wrong, the operating system will tell the program that the action was not taken, and the program can continue.

### Exceptions

An exception, on the other hand, would occur if a program tried to perform undefined instructions. The program could not continue because the operating system would not know where to find the next valid instruction in the program. Exceptions can result from many different malfunctions, but in every case, the computer does not know what to do next.

### Handling exceptions

A program can try to handle exceptions for itself using its own exception-handling routine, which essentially tells Windows, "Here are my instructions for dealing with an emergency." Even so, the program can only deal with those exceptions for which it was specifically prepared, and only if it knows how to resolve the problem.

Norton CrashGuard™ can protect your system against exceptions generated by 16-bit and 32-bit applications.

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{button ,KL('Exceptions',0,'')}>

Related Topics

Displays the 16-bit Crash Test dialog box from which you can generate 16-bit exceptions. This lets you test the ability of CrashGuard™ to trap and fix the resulting crash.

Displays the 32-bit Crash Test dialog box from which you can generate 32-bit exceptions. This lets you test the ability of CrashGuard™ to trap and fix the resulting crash.

Closes the dialog box without generating an exception.

**Detailed CrashGuard™ statistics**

This dialog box displays:

- how many crashes you have had
- how many freezes you have had
- which applications and modules caused the errors

**Note:**

- The applications named TEST16.EXE and TEST32.EXE are CrashGuard's exception-generating programs that are run when you click Test in one of the Crash Test dialog boxes. If either application shows up in this list, those crashes were probably *not* encountered during normal computing.

Displays detailed information about the crashes CrashGuard™ has trapped and the frozen applications it has unfrozen.

Displays the number of intercepted crashes and unfrozen applications.

Lets CrashGuard™ trap and fix crashes caused by 16-bit applications.

If you do not use any 16-bit applications (for example, older programs written for Window 3.x), you can leave this unchecked.



Lets CrashGuard™ trap and fix crashes caused by 32-bit applications.

Generates (or simulates) an exception of the type selected in the list above.

# Topic Title (NSR)

<dummy topic. Delete Me Eventually.>

## Banner Base

Base

Button Bar

Definition Text

Definition Title

## Heading 1

## Heading 2

heading 4,pgname,h4,pg

InProgress

- 1 List 1
  - List 2
    - List 3

Normal

Topic List Fat

Topic List Fat Last

Topic Step #

Topic Step Intro

Topic Step Last

Topic Text






Topic Substep Intro

- 1 Topic substep #

Topic Text Indent

Topic Text 3

# Topic Title (NSR)

- bullet
-  chiclet
-  closed book
-  document
- do-it
- emdash
-  nullbtn.bmp (custom)
- one step
-  open book
-  prcarrow
- shortcut
- taskico.bmp

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